

IN THE CLAIMS

1. (Original) A process for the oxidation of an olefin comprising three or more carbon atoms, wherein the process comprises:
reacting the olefin with oxygen to form a reaction mixture in the presence of a catalyst composition comprising:
silver; and,
a promoter comprising potassium and a promoter comprising rhenium
deposited on an α -alumina carrier, wherein the potassium promoter provides potassium at a concentration of up to 120 μ mole per gram of catalyst composition.
2. (Original) The process of claim 1, wherein the potassium promoter provides potassium at a concentration of from 12 μ mole to 100 μ mole per gram of catalyst composition and the rhenium promoter provides rhenium at a concentration of from 3 μ mole to 20 μ mole per gram of catalyst composition.
3. (Original) The process of claim 2, wherein the α -alumina carrier has a BET surface area of 0.1 m²/g to 25 m²/g, and an apparent porosity of from 0.1 ml/g to 1.2 ml/g.
4. (Original) The process of claim 1, wherein the α -alumina carrier comprises at least 60 %w α -alumina.
5. (Original) The process of claim 1, wherein the α -alumina carrier has a pore size distribution such that the pores with diameters in the range of from 0.2 μ m to 10 μ m comprise more than 75 % of the total pore volume; the pores with diameters greater than 10 μ m comprise less than 20 % of the total pore volume; and the pores with diameters less than 0.2 μ m comprise less than 10 % of the total pore volume.
6. (Original) The process of claim 1, wherein the α -alumina carrier has a water absorption of at least 0.35 ml/g and a surface area in the range of from 1.0 m²/g to 5 m²/g.
7. (Original) The process of claim 1, wherein the α -alumina carrier is based on:
(a) from 50 %w to 90 %w of a first particulate α -alumina having an average particle size of from more than 10 μ m up to 100 μ m; and,

(b) from 10 %w to 50 %w of a second particulate α -alumina having an average particle size of from 1 μm to 10 μm ; said %w being based on the total weight of α -alumina in the mixture.

8. (Original) The process of claim 1, wherein the α -alumina carrier comprises:

(a) from 65 %w to 75 %w, relative to the total weight of α -alumina in the mixture, of a first particulate α -alumina having an average particle size of from 11 μm to 60 μm ;

(b) from 25 %w to 35 %w, relative to the total weight of α -alumina in the mixture, of a second particulate α -alumina having an average particle size of from 2 μm to 6 μm ;

(c) from 2 %w to 5 %w of an alumina hydrate, calculated as aluminum oxide relative to the total weight of α -alumina in the mixture;

(d) from 0.2 %w to 0.8 %w of an amorphous silica compound, calculated as silicium oxide relative to the total weight of α -alumina in the mixture; and,

(e) from 0.05%w to 0.3 %w of an alkali metal compound, calculated as the alkali metal oxide relative to the total weight of α -alumina in the mixture.

9. (Original) The process of claim 1 wherein the reaction mixture further comprises an organic chloride promoter.

10. (Original) The process of claim 9 wherein the organic chloride is present at a concentration of at least 50 ppm by volume.

11. (Original) The process of claim 9, wherein the reaction mixture further comprises a NO_x promoter, wherein x is 1 or 2.

12. (Original) The process of claim 9, wherein the NO_x promoter is present at a concentration of at least 10 ppm by volume.

13 – 18. Cancelled.